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fused, the latter with a stem one-third the length of the subcylindric basal enlargement, which latter is slightly constricted near the middle and bears two whorls of unusually high circumfili. These latter form distinct, though irregular loops and in the case of the distal filum, the loops extend almost to the tip of the segment. Palpi: the first segment irregularly quadrate, the second with a length a little over twice its diameter, the third one-half longer than the second, more slender. Mesonotum dark reddish brown. Scutellum and postscutellum white, the abdomen yellowish orange, the segments narrowly margined posteriorly with rather indistinct fuscous bands. Halteres whitish transparent. Legs pale straw; claws stout, strongly curved, simple, the pulvilli rudimentary. Ovipositor short, the terminal lobes narrowly oval and thickly setose.

Type Cecid. a2594.

SOME NEW PHORIDÆ FROM JAVA.¹

BY CHARLES T. BRUES,

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Some time ago I received through the courtesy of Professor J. C. H. de Meijere a collection of Javanese Phoridæ belonging to the Amsterdam Museum. These were collected mainly by Mr. E. Jacobson who has made some interesting observations on certain members of this family in Java.

A number of new species are included in the lot which are described in the present paper.

Dohrniphora egregia Brues.

Ann. Mus. Nat. Hungarici, vol. 9, p. 534 (1911).

Of this species originally described from Formosa, there is a single specimen from Nongkodjadjar, Java, January (Jacobson).

Hypocera flavidula new species.

Male.—Length 2 m. Light yellowish brown; front piceous; abdominal segments three to six black, the sides of the first and second darkened; wings distinctly infuscated, especially near the anterior border. Front small, scarcely wider than the eye when seen from above, nearly quadrate; bristles not very strong; post-antennal pair close together, at the extreme anterior margin of the front; next row above of four bristles forming a line that is strongly

¹ Contributions from the Entomological Laboratory of the Bussey Institution, Harvard University, No. 99.

bowed downwards medially, the median bristles twice as far from each other as from the lateral ones which are well removed from the eye margin; bristles of next row just above the corresponding ones of the row below, but the row is not so strongly bowed downwards medially; ocelli on an elevated black area which is semicircularly raised above the upper margin of the front. Antennæ orange-colored, moderately large; almost spherical, but somewhat pointed at tip; arista very weakly pubescent, a little longer than the head-height. Palpi scarcely paler than the antennæ, stout, but not enlarged; bristly only at the apex, the bristles not strong. Postocular cilia large, except near the vertex; cheeks each with two long bristles, one of which is much stouter than the other. Mesonotum broad, strongly bristly along its lateral margin; one pair of dorsocentral macrochætæ placed nearer the hind angles than usual. Scutellum very short, nearly four times as broad as long, with four large bristles set very far from the median line. Propleura with three small bristles just above the insertion of the anterior coxa; mesopleura clothed with sparse black hairs anteriorly and above. Abdomen subshining; sixth segment elongated; hypopygium more or less globose, shining yellow, clothed below with sparse bristly black hairs as is also the sixth segment behind; hypopygial lamellæ finely bristly, apical bristles not enlarged. Legs slender, none of the femora thickened; anterior tibiæ with a short bristle externally at the basal fourth, another at the basal third, and another at the middle followed by four or five which become extremely minute before the apex, no spurs; middle tibiæ with a small bristle behind the outer edge near the base, another in front of the edge at the basal fourth, another in front at the middle, a series of three minute ones on the edge near the apex, and three series of minute comb-like bristles in front of the edge near apex, one long spur; posterior tibiæ with a series of six or seven small bristles outside the hind edge and two short spurs. Wings long and narrow; costal vein extending barely beyond the middle, with extremely minute, closely placed, hair-like bristles; first vein ending four times as far from the humeral cross-vein as from the tip of the third; fourth very near the costal margin of the wing, nearly straight except near apex, and recurved at both base and apex, fifth faintly sinuate; sixth more distinctly so; seventh not very distinct. Halteres concolorous with the thorax.

Three specimens from Samarang, March and November, and Batavia, Java, December (Jacobson).

A very distinct species by its color and wing venation. The color of the abdomen varies somewhat, the segments may be quite distinctly margined with pale yellow and the black on the basal segments sometimes extends inwards for a considerable distance.

APHIOCHÆTA Brues.

There are four undescribed species which may be separated by the aid of the following key:

1. Bristles of hind tibiæ in a single series, inside the hind edge 2
 Bristles of hind tibiæ in two series, a stronger one inside the hind edge
 and a weaker one just outside the hind edge; fore metatarsi of male
 enlarged, as thick as their tibiæ *A. fortiuscula* n. sp.
2. Mesopleura bare 3
 Mesopleura with a number of small bristles above, near the root of the
 wing *A. canaliculata* n. sp.
3. Body black, first costal division much longer than the second. . *A. atrita* n. sp.
 Head, thorax and legs yellow; first costal division as long as the second
 *A. meijerei* n. sp.

Aphiochæta fortiuscula new species. Pl. XIII, fig. 1.

Male.—Length 2–2.5 mm. Thorax brownish-yellow; legs testaceous, with the hind femora infuscated at apex; head black; antennæ dull ferruginous; palpi testaceous; abdomen black, first segment yellow; with narrow, clearly defined yellowish apical bands on all the other segments, each segment medially with a yellowish brown spot near the anterior margin; wings tinged with brownish, the veins fuscous. Front one third higher than broad, brownish along its lower margin; with ocellar tubercle and median frontal line, its bristles large and strong; surface subopaque, pollinose; four post-antennal bristles, the median ones nearly as large as the outer ones and two-thirds as far apart; outer ones slightly nearer to the median line than to the eye-margin and placed higher up than the inner pair of the next row above which are well below the outer bristles of this row; bristles of middle frontal row equidistant, forming a line that curves downward medially. Eyes strongly pubescent. Antennæ small, arista pubescent, twice as long as the front. Palpi of moderate size, strongly bristled below. Postocular cilia enlarged near the upper third of the eye; cheeks below each with a strong bristle and a series of gradually smaller bristles extending to the base of the antenna. Mesonotum elongate, quite shining, with five bristles along the lateral margin; one pair of dorsocentral bristles. Scutellum twice as broad as long, with two strong marginal bristles, the outer pair represented only by hairs. Propleura sparsely hairy, with two bristles at the base of the coxæ and several at the humeri; mesopleura finely bristly above, and with two large, backwardly directed bristles. None of the abdominal segments elongated; each segment with a marginal line of short bristly hairs which also extend forward on the sides of the second and third segments; sixth covered with similar hairs. Genitalia visible only as a pale yellow lamella which bears two bristly hairs at tip. Legs rather stout and short. Fore tibiæ with a single series of about 12 distinct setulæ nearly half as long as the width of the tibia; middle tibiæ with setulæ in a double row of about eight each, nearly as long as the width of the tibia, and one long spur; hind tibiæ with a row of ten long setulæ inside the hind margin and a row of eleven smaller ones on the basal two thirds outside

the hind margin; with one long and several short spurs. Fore metatarsi three-fourths as long as the tibia and almost as thick near the base, one fourth as thick as long; second tarsal joint twice as long as broad and nearly as long as the metatarsus; following joints also distinctly thickened, wings long and slender, especially toward apex; costal vein extending to the middle of the wing, its bristles short and closely placed; first costal division one half longer than the second; third one-third as long as the second, the furcation of the third vein acute; fourth vein curved near base, and straight beyond; fifth and sixth sinuate, nearly straight; seventh distinct, nearly straight. Halteres dull, light yellow, infuscated on the apex of the knob.

Two males, Depok, Java, October, 1909, and Samarang, Java, June, 1909 (Jacobson).

This species could not be confused with any others having the fore metatarsi enlarged as it has the hind tibiæ biseriate and neither the antennæ nor palpi are enlarged.

Aphiochæta canaliculata new species. Pl. XIII, fig. 6.

Male.—Length 2 mm. Piceous black, incisures of the legs, front tibiæ and tarsi, and middle tibiæ at apex, light yellow; tip of hind tibiæ and the middle and hind tarsi deeper yellow; palpi dull yellow; hypopygial lamella yellow. Wings tinged with brownish, veins piceous. Front slightly broader than high, its surface slightly pollinose but shining. Frontal bristles very long and well developed; ocellar tubercle and median frontal groove present; four post-antennal bristles of nearly uniform size, the lower ones two-thirds as far from the median line as the upper; inner bristle of next row on a level with the lower post-antennal bristle, outer one level with the upper post-antennal; four equidistant bristles in next row, forming a line curving downward medially. Postocular cilia large and stout; cheeks with two or three stout bristles followed by a series of smaller ones extending to the base of the antennæ. Antennæ slightly enlarged, the arista distinctly pubescent, slightly over twice as long as the height of the front. Palpi stout, slightly swollen, with very strong bristles near the apex. Mesonotum shining, its lateral bristles weak, about five in number; no dorsocentral bristles although there is a strong bristle at each posterior angle and a row of six bristly hairs near the base of the scutellum. Scutellum almost semicircular, with two long marginal bristles. Propleura shining, bare, except for five or six rather strong upwardly directed bristles near the spiracle and three strong downwardly directed ones just above the insertion of the coxa; mesopleura above with a patch of about eight coarse, bristly hairs. Abdomen with the second and sixth segments very slightly elongated; upper surface sparsely clothed with short, stiff hairs, more abundant at the sides. Hypopygium small, not inflexed, the lamella broad. Legs moderately long and slender, densely hairy; front tibiæ with long hairs externally, but no setulæ, their tarsi slender; middle tibiæ with about six fine setulæ inside the hind edge and an equal number of smaller ones on the basal half outside the edge, one long spur; hind tibiæ with a single row of about a

dozen medium-sized setulæ inside the hind edge from which they are separated by a more distinct groove than usual, one long and one short spur. Hind femora with a few curved bristly hairs below at the base. Wings rather long and narrow, the costa reaching barely beyond the middle of the wing, its bristles rather long, slender and closely placed; first division equal to or scarcely exceeding the second; third one-third as long as the second, the furcation of the third vein acute; fourth vein curved only at the base; fifth vein nearly straight, sixth slightly sinuate, seventh distinct. Halteres piceous, yellowish at the base of the knob.

One male from Goenceng Gedeh, Java, March, 1911 (Jacobson).

This is related to the British *A. beckeri* Wood, from which it differs by the small hypopygium, shorter costal bristles and higher front.

***Aphiochæta atrita* new species.**

Male.—Length 2 mm. Black; legs piceous, the front pair fuscous; wings hyaline, veins dark fuscous; palpi pale yellow. Front about as high as broad, its bristles strong; ocellar tubercle and median frontal groove present; four post-antennal bristles, the lower ones half the size of the upper and two-thirds as far apart; inner bristles of next row barely above the upper post-antennals and midway between them and the eye-margin; outer bristles of this row close to the eye-margin and considerably above the inner ones; row above strongly curved downward medially. Antennæ rather large; arista pubescent, one-half longer than the height of the front. Palpi of moderate size, strongly bristly below. Cheeks each with two large, stout bristles directed downwards and a series of much smaller ones extending toward the base of the antennæ. Mesonotum strongly convex, subshining, its lateral bristles short, except for one very long one a short distance in front of the hind angle; one pair of distinct dorsocentral bristles. Scutellum twice as broad as long, not strongly curved behind, with one pair of strong bristles and a weak hair anterior to each of these. Propleura bare except for three downwardly directed bristles at the lower margin and one upwardly directed one just below the spiracle. Mesopleura bare, shining below and slightly roughened above. Abdomen bare except for a few bristles on the last two segments and a very few short ones evenly distributed along the sides; none of the segments elongated. Hypopygium very small, sparsely clothed with fine hairs; lamella dark, paler at tip. Legs long, but rather stout; front tibiæ without setulæ, their tarsi slender; middle tibiæ with no distinct setulæ and one long spur; hind tibiæ with a few weak and rather short setulæ inside the hind margin on the apical two thirds, with one moderate and one short spur; hind femora with a few weak curved bristly hairs below near the base. Wings moderately long and narrow; costa just attaining the middle of the wing, its bristles of medium length and sparsely placed apically although closer together near the base; first section of costa barely longer than the second and third together; second twice as long as the third; fourth vein weakly curved at the base, almost straight beyond; fifth

and sixth very faintly sinuate; seventh faint, straight, parallel with the sixth and well removed from the anal angle of the wing. Halteres entirely black.

One specimen from Goenceng Gedeh, Java, March 11 (Jacobson).

The hypopygium is so small and the lamella so broadly attached at the base that I was at first in doubt as to the sex of the type. The two upcurved bristles at the apex of the appendage and the absence of an ovipositor of any type hitherto described, make it evident that the individual is a male.

Aphiochæta mejerei new species. Pl. XIII, fig. 7.

Male.—Length 2.5 mm. Pale yellow; ocellar tubercle, knob of halteres, an oblique spot at each side of the first abdominal segment; third, fourth and fifth abdominal segments, except a median band which extends laterally along the sutures, seventh segment, and apex of hind femora black. Wings tinged with yellow, especially in front; veins brownish yellow. Front as broad as high, with ocellar tubercle and median frontal groove; four post-antennal bristles, the upper ones one-third longer than the lower ones and nearly twice as far apart; bristles of next row extremely close together near the eye-margin, both below the upper post-antennals; next row of four equidistant bristles forming a row curved downwards medially. Antennæ small; arista pubescent, nearly twice as long as the height of the front. Palpi of moderate size, with very strong bristles toward the tip. Mesonotum subshining, with six bristles along the lateral margin; one pair of dorsocentral bristles. Scutellum nearly semicircular, with one pair of bristles and a weak hair anterior to each of these. Propleura with two downwardly directed bristles below and a patch of hairs forming a double row below the spiracle and extending half way down the pleura; mesopleura entirely bare. Abdomen with the second segment slightly elongated, furnished with a patch of bristles on each side which is repeated on the three following segments. Legs slender; anterior tibiæ without setulæ, their tarsi not enlarged; middle tibiæ with about eight small setulæ inside the hind edge and as many minute ones outside the edge; with one long spur; hind femora slightly ciliated below at base; their tibiæ with ten or a dozen rather small setulæ in a single series. Wings narrow; costal vein slightly exceeding the middle of the wing, its bristles extremely minute and closely placed; first division of costa not quite as long as the second which is five times the length of the third; light veins all very weakly curved, the fourth almost straight except near base and apex. Halteres with piceous knob and yellowish brown pedicel.

One female from Wonosobo, Java, April, 1909 (Jacobson). I have also some specimens from Formosa.

A species very similar to the widespread *A. flava*, but with fewer and larger setulæ on the middle hind tibæ, larger lower post-antennal bristles, and dark halteres.

Aphiochaeta gregalis de Meijere. Pl. XIII, fig. 5.

Ann. Jard. Bot. Buitenzorg, 2nd Ser., Suppl. III, p. 931 (1910).

From a specimen of this species determined by de Meijere, I am able to add the following characters to the original description:

The median pair of lowest reclinate frontal bristles equidistant from the median line and the eye-margin and inserted scarcely above the two proclinate ones; the lateral ones of this row small, inserted near the eye margin and a considerable distance above the median ones. Propleura with a number of bristles, longer at the insertion of the coxa; mesopleura above with numerous very fine, delicate bristles, but no large ones. None of the abdominal segments elongated, second with a few bristles at each side; sixth apically and the seventh with a number of fine black bristles. Legs very long (fig. 5).

Phalacrotophora jacobsoni new species.

Male.—Length 3.5 mm. Black; legs beyond the femora brownish-yellow, femora piceous except at base and apex; antennæ orange-yellow, palpi pale yellow; scutellum brown along posterior margin; hypopygial lamella pale yellow; halteres yellowish white; wings subhyaline, slightly infuscated toward apex. Front twice as high as wide, produced anteriorly into a rounded lobe; surface shining, impunctate; only two proclinate bristles, placed close together and well-developed, but much shorter than the two reclinate bristles of the next row above which are placed above the lower margin twice as far from the median line as from the eye-margin; next row consisting of only two medium-sized bristles next the eye-margin at the middle of the front; row above of four equidistant medium-sized bristles which form a line that is slightly, but distinctly bowed upward medially; ocellar row of four bristles; ocelli large, in a low triangle. Vertex raised, carinate on its margin for some distance along the outer orbits, but not set off from the front by a distinct groove. Eyes large, strongly pubescent, their inner margins parallel. Antennæ small, with a dorsal, faintly pubescent arista as long as the head-height. Postocular cilia much lengthened just above the middle of the eye, but smaller again above where they follow the eye-margin inside the raised vertex. Mesonotum elongate, almost twice as long as wide, thickly hairy, but shining; with three long bristles along the lateral margin before the wing, one just behind the root of the wing followed by two very long ones before the hind angle; posterior margin with eight slender bristles overlying the scutellum; no distinct dorsocentral bristles. Scutellum twice as broad as long, with two strong marginal bristles near each lateral angle. Abdomen bare and shining above, with short, bristly hairs along the lateral margin; none of the segments noticeably elongated; hypopygial lamella with two upcurved bristles at apex. Pleuræ smooth, without bristles except for two small ones above the

insertion of the anterior coxa and one at the upper anterior angle of the propleura. Legs short and stout; front coxæ hairy beneath and bristly at tip; middle coxæ hairy, bristly along outer margin, but scarcely so at tip; all tibiæ biserially setose; setæ of front tibiæ in nine pairs; those of middle tibiæ very stout, longer than the width of the tibia, in eight pairs; those of hind tibiæ scarcely longer than those of the middle ones, in eight pairs, front tibiæ with a circle of small blunt spinules at tip; middle ones with one large and three smaller spurs; hind ones with several moderate sized spurs; all femora very stout, those of the four posterior legs flattened, shortly ciliate below, the hind ones one-third as broad as long. Wings long and narrow; costal vein extending to the middle, with short, fine, closely placed bristles, first vein ending a little further from the humeral cross-vein than from the tip of costa; tip of second vein close to the tip of third, the cell at the furcation small and narrow; fourth vein slightly curved at base, recurved apically; fifth evenly arcuate, except for a slight recurving at base; sixth and seventh nearly straight. Halteres yellowish white.

Female.—Length 4 mm. Fifth abdominal segment with a brownish yellow band at apex; sixth segment piceous, brown laterally in front. Abdomen with the sixth segment elongated.

Described from a male and female taken at Batavia, Java, in August, 1907 (Jacobson).

This species is closely related to *Aphiochæta braunsi* Brues¹ from Cape Colony which also is properly referable to *Phalacrotophora* on account of the extremely long front. It differs from the South African species by the form of the upper row of frontal bristles, lack of distinct dorsocentral bristles, shorter scutellum; short first wing vein and recurved fourth vein. In color and other characters the two species are very similar.

Plastophora javensis new species. Pl. XIII, figs. 2 and 3.

Male.—Length 1 mm. Thorax dull fuscous, head and abdomen piceous; legs dull yellowish, the hind femora darker; and the fore coxæ whitish hyaline, with fuscous thick veins and almost hyaline light veins. Front somewhat more than one-half higher than wide; two very small, proclinate post-antennal bristles; bristles of lowest reclinate row well-developed, the median ones nearer to the median line than to the eye-margin, far below the lateral ones which are quite close to the eye-margin; middle reclinate row equidistant, curving upwards medially; ocellar row large; ocelli on a very indistinctly defined elevation; median frontal line present. Antennæ of moderate size, with apical, bare, arista on the oval third joint; antennal cavities very shallow. Palpi and proboscis injured in the type so that they cannot be described. Postocular cilia large, but not closely placed; two larger bristles on each

¹ Entom. News, Vol. 18, p. 391 (1907).

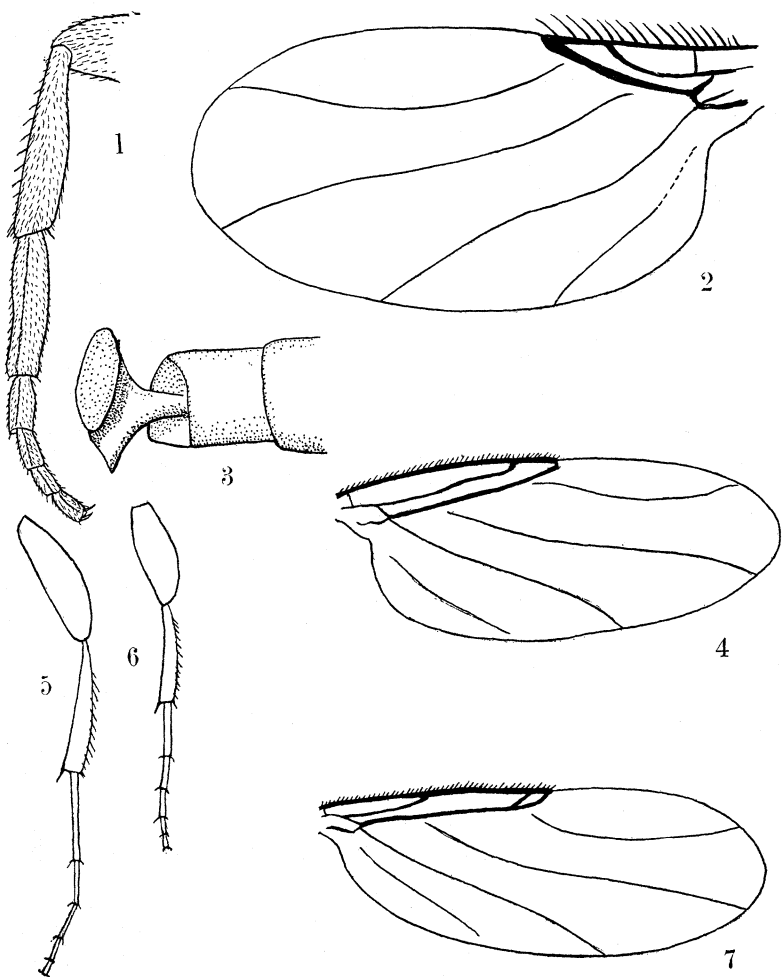
cheek; eyes distinctly pubescent. Mesonotum subshining, clothed with coarser hairs than usual; along each side with three long bristles before the root of the wing and another behind at the lateral angle; one pair of conspicuous dorsocentral bristles, but no bristles along the posterior margin. Scutellum suddenly shortened laterally, with one pair of marginal bristles, although a second lateral pair is indicated by fine hairs. Abdomen opaque; without hairs or bristles; second and sixth segments slightly elongated. Ovipositor chitinized, enlarged apically from a narrowed base and truncate so that the apex is in the form of an oval, margined disk (fig. 3) below which is a downwardly projecting tooth or short blade. Legs long and very slender; fore and middle coxæ with a few bristles at tips. Tibiæ hairy, but without any distinct setulæ; middle ones with a slender, moderately long spur, hind ones with only a very weak and indistinct spur. Propleura with several small bristles at the base of the fore coxa, mesopleura apparently bare. Wings broadly oval; costal vein falling distinctly short of the middle of the wing, with about 14 long, sparsely placed bristles; third vein thickened, not forked; first vein ending close to the third, its tip twice as far from the humeral cross-vein as from the tip of the third; fourth vein evenly curved; fifth and sixth sinuate; seventh nearly straight. Halteres whitish yellow.

One specimen from Samarang, Java, October, 1909 (E. Jacobson). The label bears the additional information "myrmecophilous."

This species is at once distinct by the peculiar configuration of the ovipositor. The very short costal vein is similar to that of the North American species, *P. crawfordi* Coq. and *P. currei* Malloch from both of which the Javanese form differs by its narrower front and the arrangement of the frontal bristles.

EXPLANATION OF PLATE XIII.

- Fig. 1. Fore tarsus of *Aphiochæta fortiuscula* n. sp.
- Fig. 2. Wing of *Plastophora javensis* n. sp.
- Fig. 3. Ovipositor of *Plastophora javensis* n. sp., lat. view.
- Fig. 4. Wing of *Hypocera flavidula* n. sp.
- Fig. 5. Hind leg of *Aphiochæta gregalis* de Meijere.
- Fig. 6. Hind leg of *Aphiochæta canaliculata*.
- Fig. 7. Wing of *Aphiochæta meijerei* n. sp.



Phoridæ.